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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,338	07/31/2001	Christian Helmig	21919	2736

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EXAMINER

LEE, PATRICK J

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application N .</b> 09/919,338	<b>Applicant(s)</b> HELMIG ET AL.	
	<b>Examin r</b> Patrick J. Lee	<b>Art Unit</b> 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 13 is/are rejected.
- 7) ☒ Claim(s) 1, 9, 12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \*   c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1, 2, 3</u> | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. The drawings are objected to because some figures still have German labels. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "6" and "9" have both been used to designate the second fiber Bragg grating. While it is understood that label "9" is used to refer to a means for mechanically deforming the fiber Bragg grating, the means must appear on the figure as a unit. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities:

On line 20 of page 12, " $\lambda_{BG2}$ " should read " $\lambda_{BG1}$ " in order to correctly refer to the first fiber Bragg grating (5).

On line 4 of page 14, "5a" should read "5.n" in order to correctly refer to the distributed Bragg gratings.

Appropriate correction is required.

***Claim Objections***

5. Claim 1 is objected to because of the following informalities: On line 13 of claim 1, "first" should be disposed between "introducing said" and "glass fiber" in order to avoid an issue with lack of antecedent basis. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-8, 10-11, & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi et al 6,597,822.

Moslehi et al disclose a fiber optic strain sensor system comprising broadband light source (344), splitter (348), sensor gratings (352, 354, 358) on a first fiber (350), sensor gratings (362, 364, 368) on a second fiber, detector (360), and a controller (380).

With respect to claims 1 & 5, Moslehi et al disclose a broadband source (344) to excite fiber (350), which has a first Bragg grating (352) with a specific Bragg reflection wavelength. Light is reflected from the grating (352) into splitter (348), which serves as an optocoupler. Splitter (348) couples fiber (350) with fiber (356). Fiber (356) has a second Bragg grating (378) of a different reflection wavelength. Nonreflected light from grating (378) is detected by detector (360). Moslehi et al disclose that a temperature change can cause a change in the grating pitch that affects the wavelength reflected (see column 3, lines 26-31 and column 4, lines 45-55). While it is not explicitly disclosed that the gratings are used to measure a temperature of an electrical apparatus, such is known and taught by Moslehi et al as it is disclosed that the sensor gratings are capable of measuring temperature (see column 13, lines 38-39). To measure the temperature of an electrical apparatus would have been obvious in order to monitor the performance of the apparatus.

With respect to claims 2 & 6, Moslehi et al disclose the use of Bragg gratings (354) along with grating (352) to serve as a plurality of gratings. Moslehi et al disclose the varying of the specific Bragg wavelength of grating (378) by use of a controller (380) to apply a tensile force on a grating (see column 9, lines 53-65).

With respect to claims 3-4, the application to the temperature alarm system, but such systems are known and would have been obvious to one of ordinary skill in order to prevent any damage to the equipment due to overheating.

With respect to claims 7 & 10, the use of a photodiode and a transimpedance amplifier was not explicitly disclosed by Moslehi et al, but such is known and would have been obvious to one of ordinary skill to use as they would provide adequate detection of the signal and its intensity.

With respect to claims 8, 11, & 13, Moslehi et al disclose the varying of the specific Bragg wavelength of grating (378) by use of a controller (380) to apply a tensile force on a grating (see column 9, lines 53-65).

***Allowable Subject Matter***

9. Claims 9, 12, & 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claims 9, 12, & 14-15, Moslehi et al disclose the system as described in the discussion of claims 1-8, 10-11, & 13 above. However, Moslehi et al do not disclose the use of an additional fiber optic with a means to convert a light signal into a voltage. To modify the teachings of Moslehi et al accordingly would not have been obvious to one of ordinary skill in the art.

**Conclusion**

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Udd et al 6,335,524 B1 disclose a fiber optic grating sensor.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (703) 305-3871. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Patrick J. Lee  
Examiner  
Art Unit 2878

PJL

  
**DAVID PORTA**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**